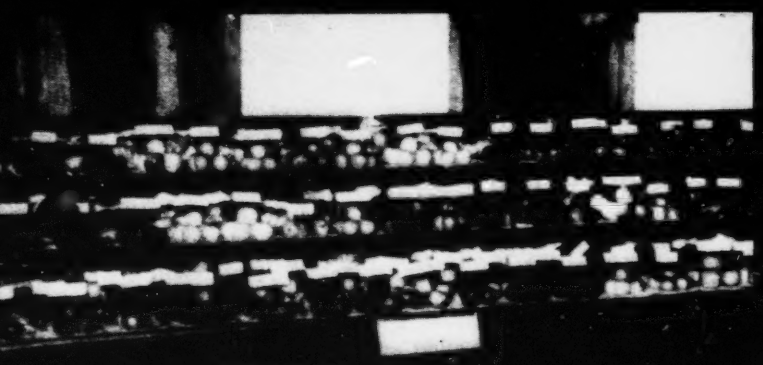

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APPLE CULTIVARS

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APPLE CULTIVARS

NOTES BASED ON PERFORMANCE AT KENTVILLE AND OTHER MARITIME SITES

There are 132 varieties reviewed. Included are new varieties which may be of interest, currently important varieties and a few older or specialty varieties in which interest is occasionally expressed. These abbreviated descriptions are intended to be relative rather than to completely describe the cultivar.

Format is standardized: origin [either country, state, (*PRI = a cooperative introduction from three state universities: Purdue, Rutgers, and of Illinois) or place if in Canada], date of introduction, parentage; size shape and appearance; internal qualities, season of the fruit; tree characteristics; observations of note-worthy features and usually an opinion of the usefulness of the variety in Nova Scotia and New Brunswick. Terms used should be self-evident especially after reading the descriptions of varieties.

Apples which may be stored are given by season of use. If harvest time does not correspond to others of its season of use then this is noted. Early apples are given by approximate date of harvest and are ready for immediate use–if storable for short periods this is noted as well.

Pollination: All apples must be cross-pollinated. Full details will be covered in another publication in this series. It may be assumed, however, that time of bloom is more or less correlated with fruit maturity. That is—early ripening apples are early blooming. Exceptions are noted in the descriptions. Triploids, which are unsatisfactory pollen producers, are also noted. Thus, unless there is a note to the contrary, it may be assumed that all varieties except the triploids are reasonably satisfactory polinators for others of the same general maturity. Another option from the usual mixed cultivar orchards is the planting of blocks of single cultivars with crab-apple pollinators. This makes it more practical to individually prune, spray and harvest each cultivar to best advantage. The main features are that the crab trees are planted as "extras". They are pruned to a narrow pole shape, more than one crab cultivar should be used so that the main bloom of the commercial cultivar is covered both early and late. Each crab must bloom annually and they should not harbour apple maggot.

A Word of Caution and a Request for Assistance: We should not have too many varieties. Markets will only handle a few varieties and introduction of new ones is difficult. Yet if there are new ones of real merit we should make use of them. For major markets a volume of up to 200,000 bushels of a new variety may be needed. Thus, it is important to adopt a new variety for the area on an industry-wide basis after extensive, grower-involved testing.

For **recommendations on what to plant and new sorts to try** we are preparing a separate brochure which may be updated annually. Hopefully most individual growers will try the best of the new cultivars in a small way and through their organization will take an increasing role in identifying, growing, and promoting, superior new cultivars to supplement and to replace those currently grown.

We would appreciate having errors or misleading statements and additional information brought to our attention.

89-00445/

Cultivar Descriptions

AKANE—Japan, 1970, Jonathan and Worcester Pearmain. Fruit medium, oblate, bright full red blush; flesh light cream, crisp, juicy, sub-acid, mild aromatic, very good, early September; tree semi-dwarf, annual. One of the better new mid-early apples being tested by a few local growers.

ANTONOVKA—Russia, pre 1826, unknown parentage. Fruit medium large, roundish, yellow, early September, sub-acid, fair-good; tree moderately vigorous, strong hardy, productive. There are several types within the variety. Not recommended for fresh fruit. Common Antonovka may be used as a seed source or even better as a pollinator for a Beautiful Arcade seed orchard.

RED ASTRACHAN—Russia, pre 1816, unknown parentage. Fruit medium, round, splashed to covered with crimson; flesh white, sub-acid, good; mid-August; tree hardy, mod. vigorous, biennially productive. Fruit tends to be small unless on young vigorous trees or well thinned. Of the six strains under test at Kentville, DeVos is about the best for color, size and shelf-life. Only recommended for a known market and/or where hardiness is particularly important.

ATLAS—Ontario, 1924, seeding of Winter St. Lawrence. Fruit medium large, round conic, red stripe; flesh white, sub-acid, fair-good, early September, tree mod. vigorous, hardy, productive. A Red sport was discovered in 1950. Variety has been grown as a fall apple in colder areas such as Quebec. Not recommended.

BALDWIN—Mass., 1780, unknown parentage. Fruit medium large; roundish, dull blushed, mod. attractive; good rather aromatic, late season; tree tender, spreading, biennially productive, a triploid. An old variety with a lot of merit and some weaknesses still grown in Northeastern U.S.A. Not recommended.

BANCROFT—Ottawa, 1935, Forest x McIntosh. Fruit medium oval conic; skin greenish yellow with dark crimson blush; flesh firm, greenish white, sub-acid, good, season late; tree hardy, spreading, very productive. Has been recommended as a processor in Ontario, is very important in Poland and adjacent countries. Not recommended.

BEACON—Minn., 1936, seedling of Malinda. Fruit medium, red blush, sub-acid, good, early September; tree hardy, productive. Also called Fenton, Miller Red, Early Delicious. Some sports or strains have been developed. Grown to a limited extent in U.S.A. in its area of origin. Not recommended.

BEAUTIFUL ARCADE—Russia, pre 1800's, unknown parentage. Fruit medium, round, yellow, slight blush, semi sweet, mid August; tree hardy, moderately vigorous, upright spreading, annual, very productive. Used as a source of seed for apple stocks. B.A. seedling rootstocks tend to be free of growing problems, induce precocity and productivity in the scion variety and give a 2/3 standard size tree. Recommended. Selected clones of B.A. (the KSC 1 to 30 rootstock series) are being developed.

BELLE DE BOSKOOP—Holland, 1856, apparently a bud sport of Reinette de Montfort. Fruit large, irregular, blushed flesh firm, crisp, acid, mod. aromatic, good; Red Delicious season; tree mod. hardy, very vigorous, productive, triploid. A widely grown culinary apple of Northern Europe. Not recommended.

BEN DAVIS—Tenn., Ky. or Va., about 1800, unknown parentage. Fruit medium large, oval conic, striped; flesh cream, firm, sub-acid, fair-good, late season; tree mod. hardy, upright spreading, annually productive. Gano is essentially a red Ben Davis. An old variety with enough scab resistance and good growing and handling characteristics to have retained some of its former popularity, still grown for processing in Nova Scotia. New plantings are questionable.

BISHOP'S PIPPIN—N.J., pre 1817, unknown parentage. Fruit medium large, oval conic, somewhat irregular, yellow with slight blush; flesh crisp, sub-acid, slightly aromatic, good, mid-late season; tree hardy, mod. vigorous, upright spreading, moderately productive. Correct name is Yellow Belleflower. A favourite apple of Bishop Inglis, hence the local name. Has some scab resistance. Bruises easily but still has a market as a direct sale to those who know it.

BLUSHING GOLDEN—Illinois, 1968, unknown parentage. Fruit medium, conic, like a smooth, light red blushed Golden Delicious; flesh firm, greenish yellow to yellow, very good, late maturing, stores well without shrivelling. Well worth a trial for the late season market.

BOUGH SWEET—See Sweet Bough.

BRITEGOLD—Smithfield, 1981, Sandel x 0-522. Fruit medium, oblong to conic, lightly ribbed, pale yellow with occasionally a tinge of light red, smooth; flesh cream to yellow, slightly coarse, tender, juicy, low acid, pleasant, mid-season, relatively short storage life. Tree vigorous, spreading, may overcrop and become biennial, blooms mid-season, scab resistant. Early cropping at Kentville is attractive and of good quality; promising.

BROCK—Maine, 1970? unknown parentage. Fruit med-large, round-conic, med. yellowish green with blush-stripe; flesh cream, crisp, juicy, scab-acid, very good; mid late season, stores well; tree vigorous, upright spreading, productive, annual though older treas can become biennial. One of the better late season apples, principle defect is lack of full red color. Should be tried.

BRAEBURN—N.Z., 1952, unknown parentage. A high quality, late maturing apple that is doing well on the international market, due to very juicy, crisp flesh; firmer and finer than Granny Smith. Not tested and probably requires too long a season for Nova Scotia.

BRAMLEY'S SEEDLING—England, 1876, unknown parentage. Very large fruit of good but acid flavour, yellowish-green, moderately striped, somewhat ribbed, mid-late season, stores fairly well. The second most grown apple in England, primarily a cooker; tree vigorous, triploid. Grows well in Nova Scotia, very good processed slice; probably would not replace Spy.

BURGUNDY—N.Y., 1974, Macoun x Antonovka. Fruit med-large, oblate, becomes very dark red at maturity where exposed to light, glossy; flesh cream with light green vasculars, mod. crisp and juicy, good to fair, may have tannins; mid-September; tree vigorous, annually productive without overcropping. A new selection, tested as NY 161. While colour and fruit size can be impressive, it seems difficult to get full color without over-maturity followed by storage breakdown and/or soft scald.

CARAVEL (Portia)—Ottawa, 1964, Melba x Crimson Beauty. Fruit med-small, round conic, yellow washed and striped with bright red, attractive; flesh cream, good, sub-acid, a week earlier than Melba; tree hardy, upright, biennial. A nice but not outstanding apple.

CARROLL—Manitoba, 1961, (Moscow Pear apple sdlg.) x Melba. Fruit medium to med-large, blush-stripe, oval, cream ground color, attractive; early September, very good, holds quality though not a long keeper; tree medium, hardy, fairly precocious. May be worth a trial for its hardiness and quality where full red color is not required.

CHARLOTTE—Fredericton, 1965?, selfed McIntosh. Fruit medium, round, striped, moderately attractive, sub-acid, very good, mid-August; tree hardy, upright spreading, productive, tends to be biennial. A variety of the McIntosh type which appears to be superior to most others of this season. Fruit has acceptable quality even when slightly immature or overripe, stored apples keep well for the season. Biennial tendency can be controlled by chemical thinning. Chief weaknesses are the lack of full red color and it is somewhat tender to blossom frosts.

CLOSE—U.S.D.A., 1938, parentage uncertain. Fruit medium large, conic somewhat irregular, stripe-blush, moderately attractive, fair-good, early August; tree hardy, vigorous, upright spreading, moderately productive, tends to be biennial, triploid. The earliest variety of quality, ripens very unevenly and does not develop quality or color until almost the day of maturity. Chemical sprays are a must for growing a commercial crop—thinner(s), stop drop, and ethephon are all required. Not recommended for commercial planting.

CORTLAND—N.Y., 1915, Ben Davis x McIntosh. Fruit med-large, round-round conic, washed and striped with red; flesh white, non-browning, sub-acid, good-very good, mid-season; tree hardy; spreading to drooping, annual, very productive, seldom needs thinning, is not subject to preharvest drop, stores well in controlled atmosphere storage, if harvested at proper time which is only two-five days after optimum McIntosh harvest. Requires chemical dip for control of storage scald. Unfortunately the original virus indexed strain (Cortland H53AR12T10) is not well colored. Spur types and better colored strains are becoming available. Of these, no spur type is currently recommended, Redcort (Hilltop and affiliated nurseries) is the best red strain currently available. Growers should obtain the latest information from our ongoing trials of the various strains before ordering trees.

EARLY CORTLAND—A separate cultivar—see under E.

COX'S ORANGE PIPPIN—England, pre 1857, posibly a seedling of Ribston Pippin. Fruit med-small, round, striped, moderately attractive, often partly russetted, flesh cream-yellow, juicy, sub-acid, aromatic, excellent, mid-season; tree only moderately hardy, med. vigor, upright spreading, annual, moderately productive. A high quality apple which has many growing problems, not now grown in Nova Scotia to any extent although it may be that Cox, and/or Golden Nugget, Golden Russet, Suntan, etc. should be reconsidered for the specialty market. The use of virus-free stocks, semi-dwarfing rootstocks and modern growing methods, would improve potential for the specialty market. Of the several redder sports, Queen Cox appears to be most recommended in England.

CRIMSON BEAUTY (Early Red Bird)—New Brunswick, about 1880, unknown parentage. Fruit medium, round, striped, acid, fair, very early; tree hardy, med. vigor, spreading, productive. An old variety which has insufficient quality but which has made money for some growers. Banks Red is a red sport.

CRITERION—Wash., 1972, possibly Gol. and Red. Delic. Greenish yellow with slight blotchy blush, good size, relatively smooth, late-marurity, good quality. A new cultivar which is gaining interest in Washington State but which does not appear to have enough extra in quality or appearance to strongly recommend planting it for our current markets, limited testing may be warranted.

CRISPIN—See Mutsu.

(RED) DELICIOUS—Iowa, 1895, unknown parentage. Fruit med-large, conic, striped or blushed red, attractive, flesh greenish cream, juicy, sweetish, very good; tree moderately tender, med. vigor, upright spreading, productive. The original standard Delicious has now been replaced by red and super red sports in both blush and stripe and in standard and spur-type trees. Over-dark strains like Harrold, Hi-early and Topred and very light strains such as Bridgeham, Superred and Vance are not recommended. Red Delicious needs training as young trees and especially so if a spur type! Overspuriness may become a problem especially in standard types as they get older and must be controlled by detail pruning. For quality the fruit must be over 2 1/2" in diameter and for large fruit the trees must be kept growing vigorously. The variety should not be grown in colder areas or where extra care for first class fruit will not be given. Growers should obtain the latest information from our ongoing trials of various strains before ordering trees.

DISCOVERY—England, 1962, seedling of Worcester Pearmain. Fruit medium round to slightly flattened, bright very attractive orange-red, very good, mid-early season, cream flesh; tree medium size, spreading, productive. Has rapidly achieved a pre Cox season market place in the U.K. Worthy of trial.

DUCHESS OF OLDENBURG—see New Brunswicker.

DUDLEY—Maine, pre 1891, seedling of Duchess of Oldenburg. Fruit med-large, round conic, striped, fairly attractive; crisp, somewhat acid, good, mid-early season; tree spreading, hardy, very productive. A useful, primarily cooker variety for New Brunswick. Recommended.

EARLY CORTLAND—N.Y., 1982, Cortland x Lodi. Quite similar appearance in fruit and tree to Cortland, striped fruit is more tart and a month earlier in maturity. Not tested at Kentville.

ELSTAR—Holland, 1971, Ingrid Marie—Gol. Delic. Fruit round, yellow with considerable blush, very good, mid-season, stores well; good tree type, precocious. A red sport has been found. Rapidly gaining a place in Europe but said to be more difficult to grow than Jonagold. Just starting to fruit at Kentville; thus far are attractive and of excellent quality but somewhat small.

EGREMONT RUSSET—England, pre 1872, unknown parentage. Fruit russeted, like Golden Russet but larger, more ribbed and not quite as crisp or fine flavoured; tree very upright, spurry. With the present interest in Russets, this old cultivar may be a more profitably substitute for the well-known Golden Russet.

EARLY McINTOSH—N.Y., 1923, Yellow Transparent x McIntosh. Fruit medium to small, round, red, sub-acid, good, early September; tree hardy, vigorous, upright spreading, biennial, often bears from late bloom on one-year wood. A good quality McIntosh type which is too difficult to thin or grow well in climates like Nova Scotia.

EMPIRE—N.Y., 1966, McIntosh x Red Delicious. Fruit medium to med-small, round to oblong, dark red blush becoming striped in shade, occasionally less than 75% red; flesh greenish cream, slightly aromatic, sub-acid, very good, mid-season, stores very well; tree hardy, upright spreading medium vigor, somewhat spurry, more or less annual, productive. This apple apepars to be a rival of Spartan. It now appears that Empire will gain a place on world markets and growers should try it. If well grown, Empire quality and storage life are superior to Spartan but the Empire tree can lack vigor (choose stock, site with care) and if the tree becomes too dense fruit color will suffer. Empire is not a satisfactory peeler apple. Recommended for general trial but on a limited scale.

FAMEUSE (Snow apple)—Quebec, pre 1700, unknown parentage. Fruit medium, roundish, striped to blush, fairly attractive; white flesh, very good, mid-season; tree moderate size, fairly hardy, productive. Very likely the parent of McIntosh. Still grown to some extent in P.Q. Not recommended.

FRANKLIN—Ohio, 1937, McIntosh x Delicious. Fruit medium, round conic, striped blush, attractive; flesh crisp, juicy, sub-acid, very good; matures between parents, keeps well; tree medium, productive. Not a processor. A nice apple, in many ways better than either of its parents, but not quite good enough to recommend.

FREEDOM—N.Y., complex parentage, 1985. A new disease-resistant apple of good quality and attractiveness. Fruit med-large, regular, round conic to slightly flat, bright blush-stripe, 60% red, fairly attractive; flesh creamy white, mild good sub-acid flavour; mid-season, stores fairly well, may develop core flush and Rome-type scald after long storage; good processor; tree vigorous, precocious and productive. Freedom is field immune to scab and resistant to mildew and rust. Well worth a trial as a dual-purpose apple.

FUJI—Japan, Ralls Janet x Delicious, 1962. A late maturing, high quality apple which now is nearly 40% of the large Japanese apple production. Fruit of medium size, rather unattractive and of only fair quality when grown in the short Nova Scotia season. Not recommended.

GALA—New Zealand, 1965, Kidd's Orange Red x Golden Delicious. Fruit med-small, roundish to slightly conic, orange stripe, moderately well colored; flesh yellow, crisp, juicy, mild aromatic, rich; mid-season, stores fairly well, subject to shrivelling if overmature; tree spurry and quite compact. A new cultivar, edible off the tree, with some potential for the aromatic-sweet specialty market and of growing interest in world trade. Several red sports are known.

GANO—Ky., or Mo., about 1875, a red sport or a seedling of Ben Davis, which see. In the 1930's the more attractive Gano, which is slightly shorter, smaller and blushed rather than striped fruit, brought a better return than Ben Davis but this does not apply now since they are all processed.

GLOSTER 69—Germany, 1972? Weisser Winter Glockenapfel x Richared Delicious. Fruit med-large, well blushed, conic, often with russet in stem cavity; flesh cream with greenish vasculars, crisp, moderately juicy, very good; mid-season, stores well, retains quality in storage much better than Red Delicious; tree is farily erect, fairly spurry and relatively precocious, does not appear to overset like Red Delicious. A new cultivar which gives good promise for replacing Red Delicious in Nova Scotia. While hardiness versus Red Delicious is not yet established, Gloster should be also tried in New Brunswick. Planted considerably in Europe where they report some tendency to mouldy core but this is not expected to be a problem here.

GOLDEN DELICIOUS—West Va., 1914, possible Grimes Golden seedling. Fruit medium, oval conic, greenish to yellow, occasionally lightly blushed; flesh yellow, slightly aromatic, excellent, late season; tree moderately hardy, moderate vigor, precocious, very productive, many spurs, biennial unless chemically thinned and not overspurred. One of the major apples of the world, needs a warm and long season for best quality. Some markets prefer them green, Canada and U.S.A. tend to prefer a rich yellow color. Goldens make a good quality canned product. Bruises easily, tends to russet, may shrivel in storage. Recent work at Kentville has shown that early harvest Gol. Delic. can be long-term stored in CA storage. Only the best of the many known strains should be planted.

GOLDEN NUGGET—Kentville, 1964, Golden Russet x Cox's Orange Pippin. Fruit med-small, round, lightly russetted, greenish yellow with orange red blush; flesh fine, juicy, creamy yellow, excellent, mid-season; tree moderately hardy, moderately vigorous, spreading, annual, moderately productive. Somewhat subject to storage rots. A new variety intended for the fruit enthusiast but which may have commercial value for the premium market when grown under modern intensive culture practices.

GOLD N'ROSE—See Maigold.

GOLDEN RUSSET—England, 1900's, unknown parentage. Fruit med-small, round, greenish yellow nearly covered with russet; flesh fine, rich, mild aromatic, sub-acid, excellent, late season; tree hardy, mod. vigorous, upright spreading, rather willowy, annual, moderate to light cropper. A high quality apple which keeps well (used to be kept well into spring in headed barrels in cool cellars). Due to difficulty of growing good crops of good size fruit it has lost much of its appeal for growers although recently there has been a renewed interest in the retail trade in Golden Russets due to their high quality and identifiable appearance.

GRANNY SMITH—Australia, pre 1895, French crab? Fruit medium, rounded to rectangular, green; very firm, crisp, juicy, mild aromatic, very good; very late, stores well, tree below medium vigor, somewhat spurry. As grown in Nova Scotia it usually has an undesirable blush and does not reach full quality under our short and cool season. A major apple of increasing importance in world trade. Spur types are known and earlier maturing clones or types are being sought. Of these, Early Granny and Shamrock do not appear good enough at first sight.

GRAVENSTEIN—Germany, pre 1800, unknown parentage. Fruit medium to large, round, somewhat irregular, blushed; flesh cream, juicy, very good, mid September; tree mod. tender, vigorous, upright spreading, tends to be biennial, productive, a triploid. An excellent variety in Nova Scotia; only the best strains of the red (crimson) sports should be grown e.g., Washington. Chemical thinning must be used when needed. Infection by flat limb virus seriously affects the tree. Market for the old fashioned or yellow Gravenstein is definite but limited although they can also be sold to processors and as immature 'cookers'. Quality of Gravenstein declines rapidly in cold storage but can be retained in low oxygen CA storage. Only virus indexed proven strains should be planted.

GREENING (Rhode Island Greening)—prob. Rhode Island, pre 1817, unknown parentage. Fruit med-large, round, greenish yellow with light blush; flesh yellow, rich, sub-acid, good, mid-season; tree mod. hardy, vigorous, spreading, productive, somewhat biennial. A triploid. A variety which is grown for processing in northeast U.S.; long grown in Nova

Scotia but has never been strongly favored by growers for reasons which are not clear. It is possible the potential of this variety has not been fully developed either culturally or for the market for fresh green winter apples.

GREENSLEEVES—England, 1977, James Grieve x Golden Delicious. Fruit medium to med-large, round. light greenish yellow at harvest becoming yellow in storage, nil to occasionally a slight light orange blush; flesh cream, crisp, early mid-season, good, good storage life, somewhat shorter if picked overmature, resistant to shrivelling; tree medium, spreading, productive. A new apple with considerable promise as a dual purpose yellow.

GRIMES GOLDEN—West Va., pre 1804, unknown parentage. Fruit medium, round, greenish yellow; flesh yellow, firm, crisp, sub-acid, aromatic, very good, mid-late season; tree upright spreading, mod. vigor, lacks hardiness, subject to collar rot. An old variety of some merit but too many tree problems.

HARALSON—Minn., 1923, seedling of Malinda. Fruit medium, round, striped, attractive; flesh good but tart, late September; tree hardy, mod. vigorous, upright spreading, productive. A very good apple especially for culinary purpose where hardiness is a prerequisite. Would most strongly rival Ben Davis in Nova Scotia, Haralson is of better quality but fruit size is not sufficiently large to suggest it as a major processor in Nova Scotia. It would have more merit in New Brunswick; the Red strain might be preferred.

HAZEN—North Dakota, 1980, Duchess x Starking Delicious. A new mid-early selection said to be hardy with good fruit quality and size. Not yet tested.

HIBERNAL—Russia, pre 1880, unknown parentage. Fruit med-large, round, greenish yellow, acid, late September; tree very hardy, spreading, vigorous, excellent crotch angles but have a slight tendency to socket-pull, induced productivity in the scion variety, tolerant of viruses. Included here because of its value as a framestock.

HOLDREN'S EARLY RED—Ohio, 1973, Wealthy x Rome Beauty. A new early season selection which has shown good size and quality as grown on young trees in growers orchards. Said to have some scab resistance and a reasonably good shelf life. Not tested at Kentville.

HOLLY—Ohio, 1970, Jonathan x Delicious. Fruit medium, full blush red, oblong conic, mid-late season; good but lacks acid; tree medium. A new very attractive replacement for Red Delicious. Tree tends toward overcropping, bienniality and smallish fruit if unthinned. While small fruit are not bitter like Red Delicious the lack of sprightly acid may be a weakness. Recommended for trial.

HONEYGOLD—Minn., 1969, Gol. Delic. x Haralson. Fruit med-large, conic, smooth, yellow, occasionally a tinge of color; flesh yellowish, juicy, very good, mid-late season; tree hardy, vigorous, upright spreading, may become biennial unless thinned, productive. A new selection which holds some promise as a Golden Delicious type apple for mid-winter fresh and processing markets especially for colder areas.

IDARED—Idaho, 1942, Jonathan x Wagener. Fruit med-large, round-flat, slightly irregular, blushed, attractive; flesh cream, firm, acid becoming sub-acid after two or three months storage, good, late season, but harvest mid-October; tree mod. hardy, rather small, upright, rather spurry, productive, tends to be biennial, blooms early. This new variety is gaining favour as an easily grown apple of the Wagener type but with better quality, more color and exceptional keeping quality. It is also a good variety for processing.

JERSEYMAC—N.J., 1971, (complex parentage) x July Red. Fruit med-large, round, uniform, blushed, attractive; flesh juicy, lightly aromatic to perfumed, very good, late August; tree reassonably hardy, very vigorous, upright, spreading, precocious, productive. A new selection fairly widely planted. Somewhat similar to best strains of McIntosh but nearly a month earlier maturing. Recommended.

JONAFREE—PRI*, 1979, complex parentage. A roundish fruit of fair size, red, sprightly very good quality, mid-late season, scab resistant. Just beginning to fruit at Kentville. Fairly similar to Jonathan, Jonafree may not have sufficient size under our conditions.

JONAGOLD—N.Y., 1968, Golden Delicious x Jonathan. Fruit med-large, oval, greenish yellow with orange blush-stripe, attractive; flesh yellow, crisp, excellent; mid-late season; tree probably moderately hardy, vigorous, upright spreading, annually productive. A triploid. This is one of the most promising of the newer selections both for fresh and processing from late fall to late spring. Tree appears to be very manageable, is not as large as many triploids. Fruit is of good size, regular shape, mild thinning sprays are required in on-crop years to maintain good fruit size and to regulate cropping. Jonagold is being extensively planted in northern Europe. Several red sports have been discovered. Jonagold should be widely tested in Nova Scotia.

JONATHAN—N.Y., about 1826, o.p. Esopus Spitzenburg. Fruit small to medium, round conic, blush-stripe, somewhat dull; flesh cream, crisp, tender, very aromatic, sub-acid, mid-season; tree medium small, somewhat drooping, subject to mildew

and fire blight. Best adapted to central U.S.A. where it is attractive and of high quality; in Nova Scotia it often overcrops, is small and of indifferent appearance and quality. Not recommended.

JONAMAC—N.Y., 1972, McIntosh x Jonathan. Fruit medium, round, fully blushed, attractive; flesh crisp, lightly aromatic, very good, a week earlier than McIntosh; tree probably hardy, mod. vigor, upright spreading, annually productive. A fine apple but may not be sufficiently superior or earlier than McIntosh to really find a place. May not store quite as well as McIntosh but would grade as well or better.

JULYRED—N.J., 1962, complex parentage. Fruit med-large, round, blushed red, attractive, flesh soft, sub-acid, very good, late August; tree appears to be hardy, mod. vigor, upright spreading, moderately productive, annual. One of the best apples in quality, appearance and size in this season, the fruit is relatively soft and requires care in handling. Unlike most early apples Julyred seldom overcrops.

KATJA—Sweden, 1966, James Grieve x Worcester Pearmain. Fruit medium, conic, blush to near full orange red, very attractive; good quality, handles well; harvest early September, very productive medium vigor tree. Nicknamed Katy in England where it is grown to some extent. Worth a trial.

KENT—England, 1974, Cox's Orange P. x Jonathan. Fruit med-large, conic, washed with red, partly russeted, moderately attractive; flesh cream, very firm, somewhat chewy and grainy, mild aromatic, good; tree medium, spreading, precocious and productive, fairly late blooming. A new selection which may have some merit as a dual purpose apple.

KESTREL—Kentville, 1976, Macoun x N.Y. Red Spy. Fruit medium, rather flat, maroon, attractive; flesh cream, sub-acid, crisp, juicy, melting, very good to best; harvest early October, stores well; tree vigorous, relatively dense, upright spreading, somewhat spurry. A new high quality selection that should be given wide testing.

KING—N.Y., 1900, unknown parentage. Fruit large, round, striped, mod. attractive; flesh yellow, firm, lightly aromatic, sub-acid, very good, mid-season; tree mod. tender, vigorous, spreading, rather wayward, annual, mod. productive. A triploid. There is a red strain. This fine old variety is still useful especially for processing. It is somewhat subject to watercore, fruit size is usually good without thinning, harvest comes at a good time. Should not be grown on light droughty soils. Full name is King of Tompkins County.

KORONA—Kentville, 1987, (Mother x Red Rome Beauty) x Scotia. Fruit medium to large, round-oblate, regular, attractive bright red; flesh cream, fine, tender, slightly perfumed sub-acid, very good, mature a few days before McIntosh; stores reasonably well; tree semi-vigorous, annually productive, seldom needs thinning. Korona is introduced an as attractive, good quality, easily managed apple particularly suited to the U-pick trade.

LIBERTY—N.Y., 1978, Macoun x complex parentage. Fruit variable oblate, full striped red, attractive; flesh light cream crisp, juicy, good, mid-season, moderate storage life; tree vigorous, spreading, precocious, productive. A new scab resistant cultivar with quality, appearance, high cropping and dual purpose capabilities. First fruit at Kentville are promising.

LINDEL—C.D.A. Smithfield, 1971, Delicious x Linda. Fruit med-large, round conic, somewhat ribbed, medium red, attractive; flesh cream, sub-acid, very good, mid-late season; tree probably hardy, spreading, productive, annual if thinned. A new selection which has promise as a processor and a storage apple; lacks sufficient red for best fresh market pack-out.

LOBO—Ottawa, 1930, McIntosh seedling. Fruit very similar to McIntosh, slightly more acid, matures 10-14 days earlier; tree hardy, somewhat smaller with thicker and more spurry wood than McIntosh, more biennial. This is a superior cultivar in New Brunswick showing very little injury in situations where McIntosh suffered considerable winter injury and cankering. While the market tends to shift from Lobo once McIntosh are available, increased market promotion and reliable product quality and supply could favour expanded Lobo production.

LODI—N.Y., 1924, Montgomery x Yellow Transparent. Fruit medium, round, yellow; flesh soft, sub-acid, good, early, good cooker if harvested slightly immature; tree hardy, vigorous, biennially productive. A better apple than Yellow Transparent; useful where a very early apple of this type is wanted. A spur type is also available but the fruit is a week later in maturity.

LOYALIST—Ottawa and Smithfield, 1981, Linda x Yellow Newtown. A new red blushed, medium, good quality, mid-late season, long storing cultivar recommended primarily for processing. First fruit at Kentville are unattractive dull yellowish-green with some blush and conspicuous dots. Eating quality is characteristic and liked by some.

MACFREE—Ottawa and Smithfield, 1974, McIntosh x (complex parentage). Fruit medium, round, medium red, attractive; flesh white to light green, sub-acid, firm, juicy, pleasant, Red Delicious season; tree vigorous, spreading, productive; scab resistant; may need thinning for best size and quality. For trial only.

MACOUN—N.Y., 1923, McIntosh x Jersey Black. Fruit medium, round conic, well blushed, attractive; flesh light cream, crisp, juicy, sub-acid, slightly aromatic, very good, mid-season; tree hardy, upright spreading, rather spurry, leaves often small, rather biennial, productive. Late bloom. An apple which can be superb, must be thinned, tree can lack vigor and is subject to foliage injury. Apple tends to have five points like Red Delicious and it will also develop pygmy apples when hormone thinners are used too late after bloom. Harvested after McIntosh, Macoun cannot be depended on to store as well. Currently there is a rather strong demand for Macoun in New England roadside and other markets. Must be considered as a specialty apple.

MANTET—Manitoba, 1929, seedling of Tetofsky. Fruit medium, round, striped, mod. attractive; flesh fairly firm, sub-acid, good, matures just after Astrachan; tree very hardy, vigorous, upright spreading, productive, tends to be biennial. One of the better apples breed for hardiness. It is probably better than Astrachan and should be given wider testing, especially in the colder areas.

MAIGOLD—Switzerland, 1952, Golden Delicious x Franc Roseau. Fruit medium, ribbed conic, striped and washed with orange red over yellow ground; flesh cream, firm, very good, late season; tree vigorous, productive, late blooming. A new selection, high quality, dual purpose, just beginning to fruit at Kentville. Early indications are only moderately favourable. Renamed Gold N'Rose in the U.S.A.

McINTOSH—Ontario, about 1870, possibly a seedling of Fameuse (Snow). Fruit medium, round, blushed, attractive, flesh crisp, juicy, sub-acid, very good, mid-season; tree hardy, vigorous, upright spreading, very productive, annual, quite susceptible to scab. McIntosh must be considered the standard apple in eastern Canada as it is by far the most widely planted and marketed. Many strains are known, some have poor color and should be avoided. Several spur types are available; while there are differences among them, in general the spur strains are more precocious, give a smaller tree and require less and somewhat different pruning; may or may not be more productive on an acreage basis; fruits tend to be more ribbed, less firm or slightly earlier maturing and often have definite green checks. Growers should obtain latest information on best strains before ordering trees.

MELBA—Ottawa, about 1924, seedling of McIntosh. Fruit medium, round conic, partly striped and washed with red, attractive; flesh rather soft, sub-acid, very good; tree hardy, vigorous, upright spreading, productive, biennial. A quality apple with three major faults—difficulty to thin and get annual production, bruises easily and often lacks enough color. Red strains are known which have better color but one of these, "Red Melba", is later maturing and is a more vigorous tree, "Melred" is very similar in tree and fruit maturity to the original Melba.

MELROSE—Ohio, 1944, Jonathan x Delicious. Fruit med-large, round, dull blush, greenish ground color, mod. attractive; flesh cream, juicy, sub-acid, very good, late season; tree about as hardy as Red Delicious, mod. vigor, upright spreading, productive, may be somewhat biennial. One of the best late season varieties. Quality superior to Idared. The chief weakness is lack of good color—about equal to Baldwin. Will withstand retail trade without deterioration. When thinned it can have high annual yields. A red strain has recently been found and should be tested.

MILWAUKEE—Wis., pre 1899, Duchess of Oldenburg sp. Fruit med-large, oblate; greenish yellow with stripe blush; flesh cream, relatively acid, only fair quality; mid-season; tree vigorous, upright spreading, hardy, very productive. An old cultivar which may still be found in New Brunswick, outstanding for its productivity, not recommended.

MOIRA—Smithfield, 1981, McIntosh x complex parentage. Fruit medium round conic, red blushed, attractive; flesh light cream, crisp, mild aromatic, very good; mid-late season, stores well, tree moderately vigorous, spreading, productive, scab resistant. A new introduction of the McIntosh type, first fruits at Kentville are promising.

MURRAY—Smithfield, 1981, McIntosh x [Red Melba x (Wolf River x *M. atrosanguinea* 804)]. Fruit medium, roundish, red blush-stripe, McIntosh type, harvested early September, good quality, stores well for an early apple eventually developing core flush; tree spreading, mod. vigorous, productive. A new early McIntosh type with scab resistance lacking somewhat in size and appearance. Recommended for trial.

MUTSU—Japan, 1948, Golden Delicious x Indo. Fruit large, conic, greenish yellow with light blush; flesh yellow, mild sub-acid, good, late season; tree mod. hardy, very vigorous, upright spreading, rather spurry, very productive. A triploid. Renamed Crispin, first in England and later in U.S.A. The fruit quality is somewhat variable depending on crop and season. As a dual purpose apple Mutsu has some potential. Mutsu should be tested by more growers.

NEW BRUNSWICK (ER)—New Brunswick, 1880? Duchess of Oldenburg? Fruit med-large, striped, acid, late August; tree mod. vigor, productive. An old apple introduced by Francis Peabody Sharp, very similar if not identical to Duchess of Oldenburg, still

grown in New Brunswick to a limited extent due to its hardiness and usefulness as an early cooking apple.

NITTANY—Pennsylvania, 1978, o.p. York Imperial. Fruit large, attractive blush-stripe; flesh yellow, slow to oxidize, late season, keeps; tree vigorous, precocious. A new processing type, first fruit at Kentville are only moderately promising.

NOVA EASYGRO—Kentville, 1971, Spartan x complex parentage. Fruit medium, round, blush-stripe, moderately attractive; flesh light cream, good, mid-season; tree hardy, vigorous, upright spreading, rather thin wood, annual, productive, scab resistant. While quality and appearance are not outstanding they are adequate, comparing reasonably well with Cortland. This, coupled with scab resistance, make it a good apple for the home gardener and for commercial trial.

NOVAMAC—Kentville, 1978, McIntosh x complex parentage. Fruit medium, roundish, blushed; flesh cream, crisp, juicy, very good, mid-season; tree medium, spreading, precocious, productive; scab immune, floribunda type. A new scab resistant selection quite similar to McIntosh. Recommended.

NOVASPY—Kentville, 1986, Nova Easygro x (Red Spy x Gol. Delic.). Fruit medium, round conic, slightly ribbed, blush-stripe, mod. attractive; flesh cream, crisp, sub-acid, very good, late season, stores well; tree upright-spreading, mod. vigorous, precocious and productive. A new scab resistant selection tested as S34-38-122 with very good processing and fruit qualities. Recommended.

OBERLE—Kentville and Virginia, 1987. Fruit med-large, round, light distinctive blotch; flesh cream, crisp, tender, juicy; very good; very early, stores well for season; tree upright spreading, mod. vigorous, precocious. A new selection (SC-2-11) received in 1973 from Dr. Oberle (now deceased) of V.P.I., Va. It is outstanding in size and quality for its extremely early season, often being a few days earlier than Close. Recommended.

ODIN—Netherlands, 1966, Golden Delicious x Ingrid Marie. Fruit medium, round conic, blush-stripe, fairly attractive; flesh light cream, fairly crisp, very good, mid-season, stores moderately well, satisfactory processor, tree medium, biennially productive. A new selection with considerable merit but may not be good enough to find a place in this season.

OZARK GOLD—Missouri, 1970, Golden Delicious x [Red Delicious x Conrad (Ben Davis x Jonathan)]. Fruit medium, round oval, smooth, golden with blush; flesh cream, crisp, aromatic, sub-acid, very good, with slightly more acid and less soluble solids than Golden Delicious it has more character, mid October; tree probably hardy, vigorous, upright spreading, productive, may become biennial. Quality and appearance are not satisfactory from overcropped trees. Attractive, earlier-maturing than Golden Delicious, may be tried where there is a market for this type.

PACIFIC GOLD—Oregon, 1948, unknown parentage. Fruit medium to large, round, greenish yellow, very slight blush; flesh medium firm, fairly juicy, mid-season; tree spreading, productive. Of some interest as a substitute for Golden Delicious, easier to grow, but of shorter storage life.

PAULARED—Michigan, 1 37, unknown parentage, possibly Cortland x. Fruit medium, round, blushed, attractive, flesh crisp, sub-acid, good, mid early; tree hardy, upright, annual, productive. Young trees may be difficult to train, due to its weeping growth habit, fruit tends to be in clusters at ends of limbs; despite ths Paulared is productive and fruit color and size are very good. Has exceptional shelf life for its season of maturity. Recommended for New Brunswick and Nova Scotia—to expand to Gravenstein market.

PORTIA—A local name for Caravel.

PRIMA—PRI*, 1970, complex parentage. Fruit medium, round-oval blushed, attractive; flesh yellow, crisp, sub-acid, good, mid September satisfactory processor; tree hardy, spreading, medium vigor, productive. A new apple of good appearance and quality with scab resistance. Should not be allowed to become overmature on the tree. Quality of Jonathan type but superior in Nova Scotia. Recommended for trial.

PRIMERED, PRIMROUGE—See Akane; also called Tohoku No. 3.

PRISCILLA—PRI*, 1972, Starking Delicious x complex parentage. Fruit medium, round-oval, blushed, attractive; flesh crisp, sub-acid, good, Cortland season; tree hardy, mod. spreading, vigorous, productive; scab resistant. Color tends to be dull, fruit size may be smallish, quality only fair unless well grown. Not recommended.

PURITAN—Mass., 1953, McIntosh x Red Astrachan. Fruit medium, round, blushed, attractive; flesh white, fairly crisp, rather tart; good, end August; tree hardy, upright spreading, productive. Grown considerably in area of origin, Puritan does not appear any better than several others already grown in Nova Scotia and New Brunswick.

QUEBEC BELLE—Quebec, 1956, seedling of Northern Spy, probably by Red Delicious. Fruit med-large, round conic, blushed, attractive; flesh crisp, sweetish with sub-acid, good, may develop tannins unless well grown; late season; tree hardy, upright spreading, vigorous, productive. A nice but not outstanding late apple which appears to combine qualities of Spy and Delicious and a hardy tree.

QUINTE—Ottawa, 1964, Crimson Beauty x Red Melba. Fruit medium, round, blushed, attractive; flesh cream, crisp, fair-good, rather tart, early August; tree very hardy, spreading, vigorous, biennially productive. For its season Quinte is especially meritorious for appearance, shelf life of fruit and for tree hardiness. There are now better choices for this season.

RED BARON—Minnesota, 1969, Golden Delicious x Red Van Buren. A productive mid early, attractive variety with uniform roundish fruits of medium size but insufficient quality to replace others in that season. Full orange red color does not develop until fruit is quite mature and hence has a relatively short storage life. Hardy and worthy of trial in colder areas.

REINETTE CLOCHARD—France, mid 1800's, unknown parentage. Fruit medium, somewhat flattened, angular and ribbed, green to greenish golden with light orange tinge on exposed check, light scarf skin, rather unattractive; flesh cream, very firm, moderately rich aromatic with good acid, late season, stores well but may shrivel slightly; tree medium, very spurry, very late blooming with small tightly clustered blossoms. An apple which would be rejected by current North American criteria, widely grown in France, with the very desirable characteristics of fruit quality and storeability.

REDFREE—PRI*, 1981, stripe-blush, well colored; flesh cream, crisp, juicy, very good mid early; tree upright spreading, precocious and productive, requires thinning for good size and best quality. A new scab resistant selection which appears quite promising for early September season.

RIBSTON (PIPPIN)—England, pre 1700, unknown parentage. Fruit medium, round oblate, striped orange, somewhat russetted; flesh cream, tender, aromatic, sub-acid, very good, end of September; tree mod. hardy, mod. vigorous, spreading, rather spurry, precocious, productive, slightly biennial, triploid. An excellent processing variety for both juice and peeling, fruit size tends to be small unless thinned and trees kept vigorous and well pruned. In fresh markets this type of aromatic flavor and non-red appearance has only been popular in the U.K.

RICHELIEU—St. Jean and Smithfield, 1983, complex parentage. A new red blush, medium size, good quality, productive, hardy, scab resistant selection; maturing a week before McIntosh. Introduced primarily for juice purposes. Not yet fruited at Kentville.

ROUVILLE—St. Jean and Smithfield, 1983, complex parentage x McIntosh. A new red blush med-large, fair quality, productive, hardy, scab resistant selection maturing two weeks after Melba. Introduced primarily for juice purposes. Not yet fruited at Kentville.

ROME BEAUTY—Ohio, abt. 1848, unknown parentage. Fruit small to large, round with rather long wiry stem, striped or blushed, selected sports are very attractive; late season; flesh cream, firm, mod. juicy, sub-acid, rather wanting in flavor, good, late season; tree hardy, mod. vigorous, below medium size, spreading to drooping, annually productive; not as subject to scab as some varieties. Of the many red strains Dalzall, Ohio Bright, Seeando, Miller, Double Red, Mills and Gallia all performed well at Kentville. Although this variety is better adapted to warmer climates it out yielded McIntosh in our trials. It must be chemically thinned. Quality is only fair but it keeps well, the better strains are very attractive and sell well in the spring market. Also a very good processor. Spur types are available. Originally proposed as one of the big six for the Annapolis Valley (Grav., McI., Cort., Red Del., Spy, Red Rome) it was not managed well and growers never realized its potential. Easy and safe to chemically thin, if planted at correct spacing and correctly pruned, Red Rome can reliably produce over 1000 bu/acre annually with packouts of 85% X-Fcy color and uniform 2 1/2—3 1/4" fruits.

SANDOW—Ottawa, 1935, Spy seedling. Fruit med. large, round-oval, blushed rather dull; flesh yellowish, crisp, lightly aromatic, sub-acid, very good, late; tree hardy, upright, rather wayward, well spurred, annual, productive. Sandow is slightly hardier than Spy and is grown in some of the colder areas. The tree is difficult to train and the fruit has found rather limited market; like Spy it is subject to bitter pit and on average probably does not keep well as Spy.

SCOTIA—Kentville, 1961, seedling of McIntosh. Fruit med-large, round, blushed, attractive; flesh cream, crisp, juicy, lightly aromatic, sub-acid, very good, early September; tree vigorous, not as hardy as McIntosh, annually productive. An apple which has gained favor due to its attributes as an early McIntosh type. Appears to require a more restrictive rootstock than McIntosh and fruit color may be a bit green if trees are too thick. Will store well for its season but will not compete with well matured McIntosh.

SHAMROCK—British Columbia, 1986, spur Gol. Delic.—spur McIntosh. Originators description: "Very similar in appearance to Granny Smith, maturity as a green apple three days before McIntosh. The growth habit is spurry and it is very precocious". While not yet tested at Kentville, early reports are only moderately enthusiastic.

SINTA—Summerland, 1970, Golden Delicious x Grimes Golden. Fruit medium, round, yellow with light blush; flesh cream, sub-acid, very good, season just after McIntosh; tree probably moderately hardy, mod. vigor, precocious, productive. A new selection from British Columbia which needs extra care when grown under

Nova Scotia conditions as it can overcrop with inadequate fruit size. Somewhat subject to core flush and red mite. Quality very good, good finish. Outstanding for sauce in limited testing. May have a place on size controlling rootstocks.

SIR PRIZE—PRI*, 1975, Tetraploid Gol. Delic. x complex parentage. Fruit med-large, ovate conic, waxy, greenish yellow; flesh cream, tender, mild aromatic, sub-acid, very good but rather watery, early October; tree vigorous, upright spreading, annually productive, triploid, scab resistant. Bruises easily and only recommended for non-wholesale trade.

SPARTAN—Summerland, 1936, McIntosh x Yellow Newton. Fruit medium, round, blushed, attractive; flesh cream, crisp, lightly aromatic, sub-acid, very good; mid-season, tree hardy, upright spreading, vigorous, somewhat spurred, usually annual, productive. A variety which has rapidly gained favor. Principal faults are over setting in Nova Scotia and storage breakdown in British Columbia. Over setting is readily controlled by proper management including spray thinning; storage breakdown, which has not occurred in Nova Scotia, is controlled by good calcium nutrition. Variety responds well to controlled atmosphere storage and gives exceptionally high packouts. Recommended, especially on size controlling rootstocks.

SPIGOLD—N.Y., 1962, Red Spy x Golden Delicious. Fruit large, round conic, blush-striped, mod. attractive; flesh yellowish, crisp, very juicy, lightly aromatic, sub-acid, very good, late season; tree hardy as Spy, upright spreading, vigorous, annually productive; a triploid. Processed product equal to Spy, fresh Spigold is equal or better than Spy after long storage. Recommended for trial.

SPY—N.Y., about 1840, unknown parentage. Fruit med-large, round conic, blush-stripe, fairly attractive; flesh yellowish, crisp, juicy, lightly aromatic, sub-acid, late season; tree mod. hardy, large, vigorous, upright then spreading, somewhat biennial, productive, late bloom, somewhat resistant to scab. Northern Spy (the full proper name) is the industry standard for processing apple in Canada. In warmer climates its productivity and quality are less superior. Tree is strong, although narrow crotch angles are a problem; rather slow to develop even though ultimately very large; responds well to the semi-dwarfing M.26 rootstock. Other size-controlling stocks and interstock combinations also show promise. Several red strains (avoid those with green flesh) are known, the better ones are now available in virus free condition. Spy is especially susceptible to bitter pit when planted on drouthy or on highly acid-low calcium soils or when too vigorous for the crop load.

SPLENDOR—New Zealand, 1967, Gol. Delic. sdlg? Fruit med-large, round-oval, blushed, some scarf skin, mod. attractive; flesh yellowish, crisp, a bit chewy, aromatic sub-acid, very good, late season, stores well; tree appears hardy, mod. vigor, upright spreading, annually productive unless allowed to overcrop; late bloom; fair processor. An apple with many good features.

SUMMERLAND—British Columbia, 1969, McIntosh x Golden Delicious. A nice well colored apple of the McIntosh type with some interest in New Zealand. Fruit medium, oblate-conic, relatively firm, later than McIntosh, stores well; tree vigorous, few laterals, somewhat spurry. Only included here because it is sometimes confused with the Summerland strain of McIntosh and is the parent of the quite different Summerred cultivar.

SUMMERRED—British Columbia, 1964, o.p. seedling of Summerland possibly by Gol. Delic. Fruit med-large, oblong, well colored rose-dark red with lighter lenticels; cream flesh, fairly firm, very good, mid early, relatively even maturity; retains quality in storage. Fruit may have some scarf skin and may shrivel from lenticels in extended storage; tree moderate size and shape, productive, also produced well on own roots.

SUNTAN—England, 1974, Cox Orange P. x Court Pendu Plat. Fruit medium, roundish, washed with red, fairly attractive, flesh cream, firm, somewhat grainy, very good, stores well; tree fairly vigorous, spreading, productive, does not appear to overset, late blooming, a triploid. A new selection with considerable merit as a larger, later storing Cox type which will also process well. Recommended for extensive trial.

SWEET BOUGH—U.S.A.?, pre 1817, unknown parentage. Fruit med-large, round conic, greenish yellow with light blush, mod. attractive; flesh white, crisp, sweet, aromatic, very good, late August; tree slightly tender, mod. vigor, upright spreading, mod. productive. A fine old, early variety, distinctive, has a definite but limited market; bruises easily but keeps reasonably well for its season.

SWEET ROSY—New Brunswick, 1976, unknown parentage. Fruit med-large, oblate, slightly ribbed, distinctive; flesh cream, firm, mod. juicy, very good; mid-late season, stores well, eventually develops core flush. A very nice winter apple developed, as was Tangowine, by Charles Stultz.

TANGOWINE—New Brunswick, 1965, unknown parentage. Fruit medium, round oval, dark red blushed, long wiry stem; flesh cream, crisp, aromatic, sub-acid, very good, late September; tree hardy, mod. vigor, annually productive. Where it is known Tangowine is reported to be a preferred apple.

TOLMAN SWEET—Mass.,?, pre 1922, unknown parentage. Fruit medium, round, somewhat ribbed, pale

yellow, no blush, occasionally one-three longitudinal fine russet suture-like lines; flesh cream, fine, firm, mod. juicy; flavour distinctive, sweet and aromatic but not rich or cloying; tree mod. vigorous, very hardy, productive. A unique hardy old cultivar, makes especially good home baked apples.

TRENT—Smithfield, 1981, McIntosh x complex parentage. Fruit medium, roundish, dull red; flesh greenish cream, crisp, fair, late season, stores well; tree medium, somewhat upright, productive. A new scab resistant selection which usually lacks sufficient quality for either fresh or processing under our conditions unless well thinned and matured.

TYDEMAN'S RED—England, 1945, McIntosh x Worcester Pearmain. Fruit medium, round, blushed, attractive; flesh cream, crisp, sub-acid, good, early September; tree hardy, spreading to drooping, tendency to blind wood, fairly annual, productive. When well grown the fruit is of excellent quality, appearance and handling ability. Spur type mutations are being developed which should overcome the lateral bud dormancy which gives rise to blind wood. On drouthy soils the fruit may be small. Originally named Tydeman's Early Worcester. May be worth limited trial.

VIKING—Wisconsin, 1970, complex parentage. Fruit medium, round, blushed, attractive; flesh white, aromatic sub-acid, good, late August; tree probably hardy, vigorous, productive. Red with greenish ground color, keeps well for its season. Nice enough but not outstanding.

VIRGINIA GOLD—Virginia, 1973, Albermarle Pippin (Yellow Newtown) x Golden Delicious. Fruit med-large, conic, yellow with up to 50% blush, very attractive, waxy, almost artificially perfect appearance; flesh cream, very firm, very good mild flavour, late, stores well; tree medium, productive, blooms with Red Delicious. A new selection which appears interesting in our early results for both fresh and processing.

VISTA BELLA—N.J., 1974, complex parentage. Fruit medium, round, blushed red, attractive; flesh creamy, crisp, juicy, very good, ten-fourteen days before Melba; tree vigorous, upright spreading, productive, biennial unless thinned. Stores well for an early apple. Fruit size can become small if trees are allowed to become unpruned and overcropped. Recommended. Use of size-controlling rootstock will improve fruit size and quality.

WAGENER—N.Y., abt. 1847, unknown parentage. Fruit medium, round, somewhat irregular, blushed on greenish yellow, attractive; flesh white, crisp, sub-acid, aromatic, very good, mid-season; tree mod. hardy, upright, mod. vigor, small, many spurs, biennially productive. An old variety with many fine qualities including high vitamin C content but not wanted by the trade for the fresh market. Subject to storage scald especially if picked immature and stored for a long time. Its white flesh, low soluble solids and often small size due to poor pruning and lack of chemical thinning, make it unpopular with the processor.

WAYNE—N.Y., 1962, Northwestern Greening x Northern Spy. Fruit med-large, round, blushed, very attractive; flesh yellowish, crisp, light aromatic, sub-acid, very good, large core, mid-season; tree mod. tender, upright, very vigorous, productive. A variety which has promise as a high quality mid-season, dual purpose apple. Peels cleanly and gives high quality products. On vigorous rootstocks Wayne has been very disappointing; too vigorous, slow to bear, subject to winter injury and canker. On M.26 or BA rootstocks performance to age 12 years, Wayne has considerably outcropped Gravenstein, King and Spy. Growers might re-consider Wayne under modern rapid turnover orchard management for both fresh and processing markets.

WEALTHY—Minn., 1869, o.p. Cherry crab. Fruit medium to variable size, round conic, greenish yellow with considerable bright red blush; flesh white, occ. with red vasculars, crisp, sub-acid, sprightly, aromatic, very good; early mid season, somewhat uneven in maturity; tree very hardy, upright spreading, medium size; precocious and productive. An older variety grown considerably at one time and still a major cultivar in north mid-west U.S.A. Red and virus-free selections are available.

WELLINGTON—N.Y., 1955, Cortland x Crimson Beauty. Fruit med-large, round, blush-stripe, attractive when mature; flesh white, crisp, rather tart, good, late August; tree hardy, upright spreading, vigorous, annually productive. While the quality and appearance are only fair when immature it is a fine apple at maturity. With its relative ease of growing and good sauce properties it may be worth wide testing. Not to be confused with an older poor quality cultivar of the same name.

WINTER BANANA—Indiana, 1876, unknown parentage. A med-large, uniquely colored late season fruit of medium to good quality, produced on a fairly vigorous tree. Used as a pollinator in many western U.S.A. Red and Golden Delicious orchards. For extra pollinators in Nova Scotia and New Brunswick we recommend other approaches including use of specially selected crab species.

YELLOW NEWTOWN—N.Y., pre 1773, unknown parentage. Fruit med-large, roundish, somewhat angular, greenish yellow with pinkish blush, late season; flesh cream, firm, crisp, sprightly, mild aromatic; tree

medium size and vigor, fairly productive. In Virginia is known as Albemarle Pippin; there is also a green type. Still grown as a late season storage apple in Washington, Va. and B.C.; has never been considered suitable for our cooler and shorter season.

YELLOW TRANSPARENT—Russia, 1870, unknown parentage. Fruit small to med-large, round conic, greenish to yellow; flesh cream, soft, tart, good, early August; tree very hardy, vigorous, upright spreading, productive, rather biennial. An old variety which has been used for early cooker and fresh market. Bruises easily, short shelf life. Lodi is usually considered a better yellow apple in this season, red varieties now tend to dominate the summer apple market.

YORK IMPERIAL—Penn., 1830, unknown parentage. Fruit med-large, round-oblate, somewhat lopsided; greenish yellow with medium blush; flesh yellowish, firm, crisp, sub-acid, good; mid-late season, stores well; tree mod. vigorous, upright spreading, crops well. York is the major processor in the Applachian area where it grows well and withstands indifferent storage conditions prior to processing in spite of some problems with scald and York spot disorder. It has never attracted interest in limited grower trials here but its unique ability to process well from common storage should be incorporated into our processing cultivars. See Nittany.

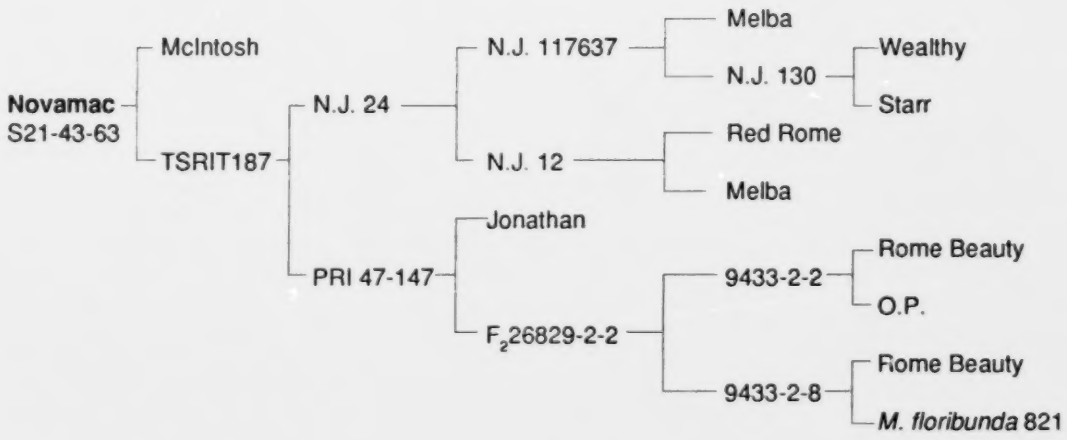
A.D. Crowe
January 1988

PEDIGREE INFORMATION NOT GIVEN IN MAIN TEXT

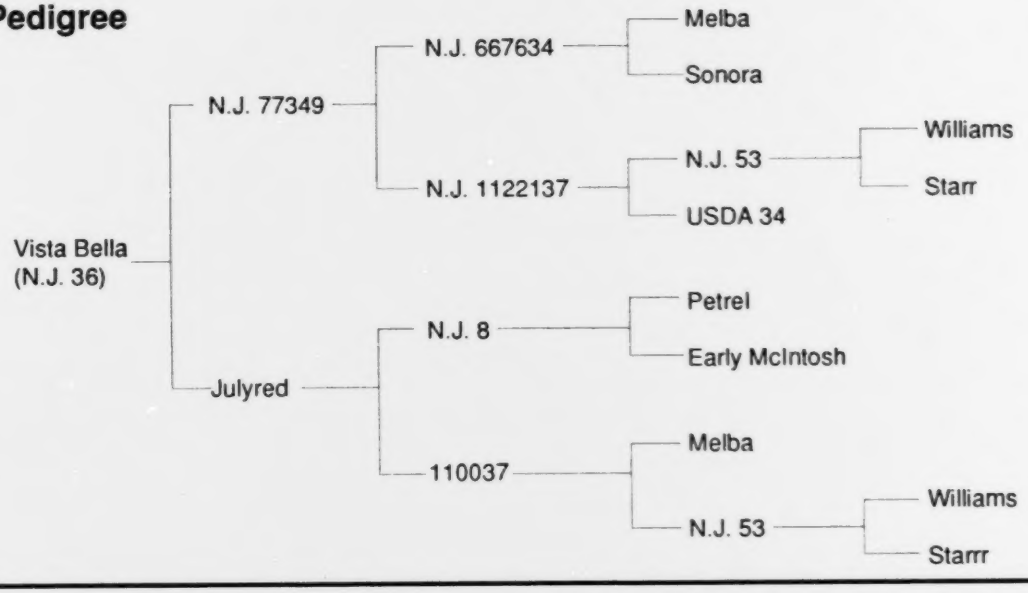
Abbreviated pedigrees giving parentage of 20 scab resistant cultivars with number of generations from source of scab resistance and detail pedigrees of Novamac and the non scab resistant cultivar Vista Bella.

Cultivar Name	Generation Number	Proportionate Parentage
Britegold	6	1/4 Red Delicious, 1/4 Red Melba, 1/8 Northern Spy, 1/8 Jonathan, 1/8 unknown, 1/32 x 2 Rome Beauty, 1/32 *M. floribunda* 821, 1/32 unknown.
Freedom	5	1/4 Macoun, 1/4 Antonovka, 1/4 Golden Delicious, 1/16 x 2 Rome Beauty, 1/16 *M. floribunda* 821, 1/16 unknown.
Jonafree	6	1/4 Jonathan, 1/4 Gallia Beauty, 1/4 Red Spy, 1/8 Golden Delicious, 1/32 x 2 Rome Beauty, 1/32 *M. floribunda* 821, 1/32 unknown.
Liberty	5	1/2 Macoun, 1/4 Wealthy, 1/16 x 2 Rome Beauty, 1/16 *M. floribunda* 821, 1/16 unknown.
Macfree	5	1/2 McIntosh, 1/4 Jonathan, 1/16 x 2 Rome Beauty, 1/16 *M. floribunda* 821, 1/16 unknown.
Moira	5	1/2 McIntosh, 1/4 Jonathan, 1/16 x 2 Rome Beauty, 1/16 *M. floribunda* 821, 1/16 unknown.
MacShay	6	1/2 McIntosh, 1/4 Starking Giant Limb, 1/8 Golden Delicious, 1/32 x 2 Rome Beauty, 1/32 *M. floribunda* 821, 1/32 unknown.
Murray	5	1/2 McIntosh, 1/4 Red Melba, 1/16 Wolf River, 1/16 *M.* x *atrosanguinea* 804.
Nova Easygro	4	1/2 Spartan, 1/8 Fanny, 1/8 Jefferis, 1/8 Wealthy, 1/8 Russian seedling 12740-7A.
Novamac	6	1/2 McIntosh, 1/8 Jonathan, 1/16 x 2 Melba, 1/16 Red Rome, 1/32 Wealthy, 1/32 Starr, 1/32 x 2 Rome Beauty, 1/32 *M. floribunda* 821, 1/32 unknown.

Novamac Pedigree



Vista Bella (N.J 36) Pedigree



Cultivar Name	Generation Number	Proportionate Parentage
Novaspy	5	1/2 Nova Easygro, 1/4 Red Spy, 1/4 Golden Delicious.
Priam	5	1/2 Jonathan, 1/4 Golden Delicious, 1/16 x 2 Rome Beauty, 1/16 *M. floribunda* 821, 1/16 unknown.
Prima	5	1/4 Golden Delicious, 1/8 x 2 Melba, 1/8 Red Rome, 1/16 Wealthy, 1/16 Starr, 1/16 x 2 Rome Beauty, 1/16 *M. floribunda* 821, 1/16 unknown.
Priscilla	6	1/2 Starking Delicious, 1/4 McIntosh, 1/8 Golden Delicious, 1/32 x 2 Rome Beauty, 1/32 *M. floribunda* 821, 1/32 unknown.
Querina	6	1/2 Jonathan, 1/4 Starking Simpsons Giant Limb, 1/8 Golden Delicious, 1/32 x 2 Rome Beauty, 1/32 *M. floribunda* 821, 1/32 unknown.
Redfree	6	1/2 Raritan, 1/8 Jonathan, 1/32 x 2 Rome Beauty, 1/32 *M. floribunda* 821, 1/32 unknown.
Richelieu	6	1/4 Melba, 1/4 McIntosh, 1/8 x 2 Jonathan, 1/32 x 4 Rome Beauty, 1/32 x 2 *M. floribunda* 821, 1/32 x 2 unknown.
Rouville	4	1/2 McIntosh, 1/8 Red Melba, 1/16 Wolf River, 1/16 *M.* x *atrosanguinea* 804.
Sir Prize	5	1/2 Douds tetraploid Golden Delicious, 1/4 Golden Delicious, 1/16 Rome Beauty, 1/16 *M. floribunda* 821, 1/16 unknown.
Trent	5	1/2 McIntosh, 1/4 Jonathan, 1/16 x 2 Rome Beauty, 1/16 *M. floribunda* 821, 1/16 unknown.

NOTE:

1) Where the fraction is x 2 it indicates that the parent was used at two different places in the pedigree.
2) Obviously there were many un-named selections used as parents, these are not listed (compare abbreviated pedigree of Novamac which lists 9 parents, with the full pedigree of Novamac which shows 9 numbered selections derived from the 9 named cultivars for a total of 18 parents involved in the full pedigree over 6 generations).
3) Seed parent is on upper line and pollen parent on lower line of each cross.

A LISTING BY APPROXIMATE MARKETING SEASON

with **best** cultivars, those especially suggested for *trial* and scab resistant* and some hardy^h cultivars noted.

Very early: Close, Crimson Beauty^h, Lodi, **Oberle**, Yellow Transparent.

Early: Red Astrakhan^h, Beautiful Arcade^h, Bough Sweet, Caravel, Charlotte, **Jerseymac**, Julyred, Mantet^h, Melba, Murray*, Quinte, Sweet Bough, **Vista Bella**, Wellington.

Mid-early: *Akane*, Antonovka^h, Atlas, Beacon, *Britegold**, Burgundy, Carroll, *Discovery*, **Dudley**^h, Early Cortland, Early McIntosh, **Gravenstein**, Hazen, Holdren's Early Red, *Katja*, New Brunswicker^h, **Paulared**, Puritan, Red Baron, **Redfree***, Scotia, Summerred, Tydeman's Red, Viking.

Mid: Cortland, Cox's Orange Pippin, Fameuse, Gala, **Golden Nugget**, *Greensleeves*, Hibernal^h, *Jonamac*, Kent, **King**, *Korona*, *Liberty**, **Lobo**^h, **McIntosh**, Milwaukee^h, *Moira**, **Novamac***, Odin, Pacific Gold, **Prima***, Ribston, Richelieu*, Shamrock, Summerland, *Suntan*, Tangowine, Wealthy^h.

Mid-late: Bancroft, Bishop's Pippin, Bramley's Seedling, **Red Delicious**, *Elstar*, Egremont Russet, *Empire*, Franklin, *Freedom**, *Gloster 69*, R.J. Greening, Grimes Golden, Haralson^h, *Holly*, Honeygold, Jonafree*, Jonathan, **Kestrel**, Lindel, Loyalist, Macfree*, Macoun, Mutsu, Nova Easygro*, Novaspy*, Ozark Gold, Priscilla*, Quebec Belle, Reinette Clochard, Sandow, Sinta, Sir Prize*, Spartan, Spy, Splendor, Sweet Rosy, Tolman Sweet^h, *Virginia Gold*, Wagener, *Wayne*, Winter Banana.

Late: Baldwin, Belle de Boskoop, Ben Davis, Blushing Golden, Brock, Braeburn, Criterion, Fiji, Gano, **Golden Delicious**, **Golden Russet**, Granny Smith, **Idared**, **Jonagold**, Marigold, **Melrose**, Nittany, **Red Rome Beauty**, Spigold, Trent, Yellow Newtown, York Imperial.

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NOTE: The above is only intended for a quick summary and only as a rough guide as when written. Harvesting and marketing will considerably overlap between groups. Specific recommendations should come from industry planners with annual updates.